

STORM WATER MANAGEMENT PLAN
For Priority Projects
(Major SWMP)
21- ACRE PROPERTY
FALLBROOK
TPM 20976
LOG # 05-02-007
SAN DIEGO COUNTY, CALIFORNIA

PREPARED BY
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Fallbrook, CA 92028

Date: December 8, 2006
Revised: February 3, 2009

Storm Water Management Plan For Priority Projects (Major SWMP)

The Major Stormwater Management Plan (Major SWMP) must be completed in its entirety and accompany applications to the County for a permit or approval associated with certain types of development projects. To determine whether your project is required to submit a Major or Minor SWMP, please reference the County's Stormwater Intake Form for Development Projects.

Project Name:	TPM 20976
Permit Number (Land Development Projects):	Log No. 05-02-007
Work Authorization Number (CIP only):	
Applicant:	Dien Do
Applicant's Address:	405 Ranger Road Fallbrook CA 92028
Plan Prepare By (<i>Leave blank if same as applicant</i>):	William Karn Surveying, Inc. 129 W. Fig St. Fallbrook CA 92028
Date:	December 8, 2006
Revision Date (If applicable):	February 3, 2009

The County of San Diego Watershed Protection, Storm Water Management, and Discharge Control Ordinance (WPO) (Ordinance No. 9926) requires all applications for a permit or approval associated with a Land Disturbance Activity to be accompanied by a Storm Water Management Plan (SWMP) (section 67.806.b). The purpose of the SWMP is to describe how the project will minimize the short and long-term impacts on receiving water quality. Projects that meet the criteria for a priority development project are required to prepare a Major SWMP.

Since the SWMP is a living document, revisions may be necessary during various stages of approval by the County. Please provide the approval information requested below.

Project Stages	Does the SWMP need revisions?		If YES, Provide Revision Date
	YES	NO	
TPM 20976	✓		Sept 26, 2008

Instructions for a Major SWMP can be downloaded at <http://www.co.san-diego.ca.us/dpw/stormwater/susmp.html>.

Completion of the following checklists and attachments will fulfill the requirements of a Major SWMP for the project listed above.

PROJECT DESCRIPTION

Please provide a brief description of the project in the following box. Please include:

- Project Location
- Project Description
- Physical Features (Topography)
- Surrounding Land Use
- Proposed Project Land Use
- Location of dry weather flows (year-round flows in streams, or creeks) within project limits, if applicable

The project location is at 405 Ranger Road in Fallbrook, CA. It consists of 21+/- acre on a private road in the Fallbrook Community Plan Area. The project will take access from a 40' private road easement which will end with a 36' radius cul-de-sac.

Project Description: The project will consist of 4+ acre parcels with a remainder parcel. Water mains approximately 1300 ft. long will be constructed. The road and cul-de-sac will be constructed to private road standards, approximately 1300 ft along an existing paved grove road.

Physical Features: The property is typical Fallbrook with gentle to steep rolling hillside. The site has recently been planted to avocados and onsite an existing large ag building a small single family residence and an existing pond. An old existing shed onsite was recently lost during the Rice Canyon Fire and will not be rebuilt.

Surrounding land use: Single family dwelling on large parcels (2+ acs) on the north, east and west and vacant southerly.

Proposed project land use: The proposed project proposes 4-4ac + parcel plus a remainder. Each will allow SFD and the existing ag.

Location of dry weather flows: There is a year round pond on site and the water level is maintained by the onsite well. Dry weather flow was not observed.

PRIORITY DEVELOPMENT PROJECT DETERMINATION

Please check the box that best describes the project. Does the project meet one of the following criteria?

Table 1

PRIORITY DEVELOPMENT PROJECT	YES	NO
Redevelopment that creates or adds at least 5,000 net square feet of additional impervious surface area <u>and</u> falls under one of the criteria listed below.	✓	
Residential development of more than 10 units		✓
Commercial developments with a land area for development of greater than 1 acre		✓
Heavy industrial development with a land area for development of greater than 1 acre		✓
Automotive repair shop(s)		✓
Restaurants, where the land area for development is greater than 5,000 square feet		✓
Hillside development, in an area with known erosive soil conditions, where there will be grading on any natural slope that is twenty-five percent or greater, if the development creates 5,000 square feet or more of impervious surface	✓	
Environmentally Sensitive Areas (ESA): All development located within or directly adjacent to or discharging directly to an ESA (where discharges from the development or redevelopment will enter receiving waters within the ESA), which either creates 2,500 square feet of impervious surface on a proposed project site or increases the area of imperviousness of a proposed project site to 10% or more of its naturally occurring condition. "Directly adjacent" means situated within 200 feet of the ESA. "Discharging directly to" means outflow from a drainage conveyance system that is composed entirely of flows from the subject development or redevelopment site, and not commingled with flows from adjacent lands.		✓
Parking Lots 5,000 square feet or more or with 15 parking spaces or more and potentially exposed to urban runoff		✓
Streets, roads, highways, and freeways which would create a new paved surface that is 5,000 square feet or greater	✓	
Retail Gasoline Outlets (RGO) that meet the following criteria: (a) 5,000 square feet or more or (b) a projected Average Daily Traffic (ADT) of 100 or more vehicles per day.		✓

Limited Exclusion: Trenching and resurfacing work associated with utility projects are not considered Priority Development Projects. Parking lots, buildings and other structures associated with utility projects are subject to the WPO requirements if one or more of the criteria above are met.

If you answered **NO** to all the questions, then **STOP**. Please complete a Minor SWMP for your project.

If you answered **YES** to any of the questions, please continue.

HYDROMODIFICATION DETERMINATION

The following questions provide a guide to collecting information relevant to hydromodification management issues.

Table 2

	QUESTIONS	YES	NO	Information
1.	Will the proposed project disturb 50 or more acres of land? (Including all phases of development)		X	If YES, continue to 2. If NO, go to 6.
2.	Would the project site discharge directly into channels that are concrete-lined or significantly hardened such as with rip-rap, sackcrete, etc, downstream to their outfall into bays or the ocean?		X	If NO, continue to 3. If YES, go to 6.
3.	Would the project site discharge directly into underground storm drains discharging directly to bays or the ocean?		X	If NO, continue to 4. If YES, go to 6.
4.	Would the project site discharge directly to a channel (lined or un-lined) and the combined impervious surfaces downstream from the project site to discharge at the ocean or bay are 70% or greater?		X	If NO, continue to 5. If YES, go to 6.
5.	Project is required to manage hydromodification impacts.		X	Hydromodification Management Required as described in Section 67.812 b(4) of the WPO.
6.	Project is not required to manage hydromodification impacts.		X	Hydromodification Exempt. Keep on file.

An exemption is potentially available for projects that are required (No. 5. in Table 2 above) to manage hydromodification impacts: The project proponent may conduct an independent geomorphic study to determine the project's full hydromodification impact. The study must incorporate sediment transport modeling across the range of geomorphically-significant flows and demonstrate to the County's satisfaction that the project flows and sediment reductions will not detrimentally affect the receiving water to qualify for the exemption.

STORMWATER QUALITY DETERMINATION

The following questions provide a guide to collecting information relevant to project stormwater quality issues. Please provide the following information in a printed report accompanying this form.

Table 3

	QUESTIONS	COMPLETED	NA
1.	Describe the topography of the project area.	Gently rolling hills	
2.	Describe the local land use within the project area and adjacent areas.	Agricultural avocados (17) 0.5 DU/Ac	
3.	Evaluate the presence of dry weather flow.	No dry weather	
4.	Determine the receiving waters that may be affected by the project throughout all phases of development (i.e., construction, maintenance and operation).	Bonsall Hyd. Sub Unit	
5.	For the project limits, list the 303(d) impaired receiving water bodies and their constituents of concern.	No 303d onsite	
6.	Determine if there are any High Risk Areas (which is defined by the presence of municipal or domestic water supply reservoirs or groundwater percolation facilities) within the project limits.	No high risk areas downstream	
7.	Determine the Regional Board special requirements, including TMDLs, effluent limits, etc.	No spec. req.	
8.	Determine the general climate of the project area. Identify annual rainfall and rainfall intensity curves.	Annual rainfall 15" to 20"	
9.	If considering Treatment BMPs, determine the soil classification, permeability, erodibility, and depth to groundwater.	Soil Group B & D	
10.	Determine contaminated or hazardous soils within the project area.	No haz. Soil onsite	
11.	Determine if this project is within the environmentally sensitive areas as defined on the maps in Appendix A of the <i>County of San Diego Standard Urban Storm Water Mitigation Plan for Land Development and Public Improvement Projects</i>		✓
12.	Determine if this is an emergency project.		✓

WATERSHED

Please check the watershed(s) for the project.

<input type="checkbox"/> San Juan 901	<input type="checkbox"/> Santa Margarita 902	<input checked="" type="checkbox"/> San Luis Rey 903	<input type="checkbox"/> Carlsbad 904
<input type="checkbox"/> San Dieguito 905	<input type="checkbox"/> Penasquitos 906	<input type="checkbox"/> San Diego 907	<input type="checkbox"/> Sweetwater 909
<input type="checkbox"/> Otay 910	<input type="checkbox"/> Tijuana 911	<input type="checkbox"/> Whitewater 719	<input type="checkbox"/> Clark 720
<input type="checkbox"/> West Salton 721	<input type="checkbox"/> Anza Borrego 722	<input type="checkbox"/> Imperial 723	

Please provide the hydrologic sub-area and number(s)

Number	Name
903.12	Bonsall Hydrological Subarea

Please provide the beneficial uses for Inland Surface Waters and Ground Waters.
Beneficial Uses can be obtained from the Water Quality Control Plan for the San Diego Basin, which is available at the Regional Board office or at
<http://www.swrcb.ca.gov/rwqcb9/programs/basinplan.html>.

SURFACE WATERS	Hydrologic Unit Basin Number	MUN	AGR	IND	PROC	GWR	FRESH	POW	REC1	REC2	BIOL	WARM	COLD	WILD	RARE	SPWN
Inland Surface Waters	903.12	*	X	X					X	X		X		X		
Ground Waters	903.12	X	X	X												

* Excepted from Municipal

X Existing Beneficial Use

0 Potential Beneficial Use

POLLUTANTS OF CONCERN

Using Table 5, identify pollutants that are anticipated to be generated from the proposed priority project categories. Pollutants associated with any hazardous material sites that have been remediated or are not threatened by the proposed project are not considered a pollutant of concern.

Table 4. Anticipated and Potential Pollutants Generated by Land Use Type

<i>PDP Categories</i>	<i>General Pollutant Categories</i>								
	Sediments	Nutrients	Heavy Metals	Organic Compounds	Trash & Debris	Oxygen Demanding Substances	Oil & Grease	Bacteria & Viruses	Pesticides
Detached Residential Development	X	X			X	X	X	X	X
Attached Residential Development	X	X			X	P ⁽¹⁾	P ⁽²⁾	P	X
Commercial Development 1 acre or greater	P ⁽¹⁾	P ⁽¹⁾		P ⁽²⁾	X	P ⁽⁵⁾	X	P ⁽³⁾	P ⁽⁵⁾
Heavy industry /industrial development	X		X	X	X	X	X		
Automotive Repair Shops			X	X ⁽⁴⁾⁽⁵⁾	X		X		
Restaurants					X	X	X	X	
Hillside Development >5,000 ft ²	X	X			X	X	X		X
Parking Lots	P ⁽¹⁾	P ⁽¹⁾	X		X	P ⁽¹⁾	X		P ⁽¹⁾
Retail Gasoline Outlets			X	X	X	X	X		
Streets, Highways & Freeways	X	P ⁽¹⁾	X	X ⁽⁴⁾	X	P ⁽⁵⁾	X		
<p>X = anticipated P = potential (1) A potential pollutant if landscaping exists on-site. (2) A potential pollutant if the project includes uncovered parking areas. (3) A potential pollutant if land use involves food or animal waste products. (4) Including petroleum hydrocarbons. (5) Including solvents.</p>									

Note: If other monitoring data that is relevant to the project is available. Please include as Attachment C.

CONSTRUCTION BMPs

Please check the construction BMPs that may be implemented during construction of the project. The applicant will be responsible for the placement and maintenance of the BMPs incorporated into the final project design.

- | | |
|--|--|
| <input checked="" type="checkbox"/> Silt Fence | <input type="checkbox"/> Desilting Basin |
| <input checked="" type="checkbox"/> Fiber Rolls | <input checked="" type="checkbox"/> Gravel Bag Berm |
| <input type="checkbox"/> Street Sweeping and Vacuuming | <input type="checkbox"/> Sandbag Barrier |
| <input type="checkbox"/> Storm Drain Inlet Protection | <input checked="" type="checkbox"/> Material Delivery and Storage |
| <input checked="" type="checkbox"/> Stockpile Management | <input checked="" type="checkbox"/> Spill Prevention and Control |
| <input checked="" type="checkbox"/> Solid Waste Management | <input checked="" type="checkbox"/> Concrete Waste Management |
| <input checked="" type="checkbox"/> Stabilized Construction Entrance/Exit | <input checked="" type="checkbox"/> Water Conservation Practices |
| <input type="checkbox"/> Dewatering Operations | <input checked="" type="checkbox"/> Paving and Grinding Operations |
| <input type="checkbox"/> Vehicle and Equipment Maintenance | |
| <input checked="" type="checkbox"/> Any minor slopes created incidental to construction and not subject to a major or minor grading permit shall be protected by covering with plastic or tarp prior to a rain event, and shall have vegetative cover reestablished within 180 days of completion of the slope and prior to final building approval. | |

EXCEPTIONAL THREAT TO WATER QUALITY DETERMINATION

Complete the checklist below to determine if a proposed project will pose an “exceptional threat to water quality,” and therefore require Advanced Treatment Best Management Practices.

Table 5

No.	CRITERIA	YES	NO	INFORMATION
1.	Is all or part of the proposed project site within 200 feet of waters named on the Clean Water Act (CWA) Section 303(d) list of Water Quality Limited Segments as impaired for sedimentation and/or turbidity? Current 303d list may be obtained from the following site: http://www.swrcb.ca.gov/tmdl/docs/303dlists2006/approved/r9_06_303d_req_tmdls.pdf		X	If YES, continue to 2. If NO, go to 5.
2.	Will the project disturb more than 5 acres, including all phases of the development?		X	If YES, continue to 3. If NO, go to 5.
3.	Will the project disturb slopes that are steeper than 4:1 (horizontal: vertical) with at least 10 feet of relief, and that drain toward the 303(d) listed receiving water for sedimentation and/or turbidity?		X	If YES, continue to 4. If NO, go to 5.
4.	Will the project disturb soils with a predominance of USDA-NRCS Erosion factors k_f greater than or equal to 0.4?		X	If YES, continue to 6. If NO, go to 5.
5.	Project is not required to use Advanced Treatment BMPs.	X		Document for Project Files by referencing this checklist.
6.	Project poses an “exceptional threat to water quality” and is required to use Advanced Treatment BMPs.		X	Advanced Treatment BMPs must be consistent with WPO section 67.811(b)(20)(D) performance criteria

Exemption potentially available for projects that require advanced treatment:

Project proponent may perform a Revised Universal Soil Loss Equation, Version 2 (RUSLE 2), Modified Universal Soil Loss Equation (MUSLE), or similar analysis that shows to the County official's satisfaction that advanced treatment is not required

Now that the need for treatment BMPs has been determined, other information is needed to complete the SWMP.

SITE DESIGN

To minimize stormwater impacts, site design measures must be addressed. The following checklist provides options for avoiding or reducing potential impacts during project planning. If YES is checked, it is assumed that the measure was used for this project.

Table 6

	OPTIONS	YES	NO	N/A
1.	Has the project been located and road improvements aligned to avoid or minimize impacts to receiving waters or to increase the preservation of critical (or problematic) areas such as floodplains, steep slopes, wetlands, and areas with erosive or unstable soil conditions?		X	
2.	Is the project designed to minimize impervious footprint?		X	
3.	Is the project conserving natural areas where feasible?	X		
4.	Where landscape is proposed, are rooftops, impervious sidewalks, walkways, trails and patios be drained into adjacent landscaping?	X		
5.	For roadway projects, are structures and bridges be designed or located to reduce work in live streams and minimize construction impacts?	X		
6.	Can any of the following methods be utilized to minimize erosion from slopes:	X		
	6.a. Disturbing existing slopes only when necessary?	X		
	6.b. Minimize cut and fill areas to reduce slope lengths?	X		
	6.c. Incorporating retaining walls to reduce steepness of slopes or to shorten slopes?			X
	6.d. Providing benches or terraces on high cut and fill slopes to reduce concentration of flows?			X
	6.e. Rounding and shaping slopes to reduce concentrated flow?	X		
	6.f. Collecting concentrated flows in stabilized drains and channels?	X		

LOW IMPACT DEVELOPMENT (LID)

Each numbered item below is a LID requirement of the WPO. Please check the box(s) under each number that best describes the Low Impact Development BMP(s) selected for this project.

Table 7

1.	Conserve natural Areas, Soils, and Vegetation-County LID Handbook 2.2.1
<input checked="" type="checkbox"/>	Preserve well draining soils (Type A or B)
<input checked="" type="checkbox"/>	Preserve Significant Trees
<input type="checkbox"/>	Other. Description:
<input type="checkbox"/>	1. Not feasible. State Reason:
2.	Minimize Disturbance to Natural Drainages-County LID Handbook 2.2.2
<input checked="" type="checkbox"/>	Set-back development envelope from drainages
<input type="checkbox"/>	Restrict heavy construction equipment access to planned green/open space areas
<input type="checkbox"/>	Other. Description:
<input type="checkbox"/>	2. Not feasible. State Reason:
3.	Minimize and Disconnect Impervious Surfaces (see 5) -County LID Handbook 2.2.3
<input type="checkbox"/>	Clustered Lot Design
<input checked="" type="checkbox"/>	Items checked in 5?
<input type="checkbox"/>	Other. Description:
<input type="checkbox"/>	3. Not feasible. State Reason:
4.	Minimize Soil Compaction-County LID Handbook 2.2.4
<input checked="" type="checkbox"/>	Restrict heavy construction equipment access to planned green/open space areas
<input type="checkbox"/>	Re-till soils compacted by construction vehicles/equipment
<input checked="" type="checkbox"/>	Collect & re-use upper soil layers of development site containing organic materials
<input type="checkbox"/>	Other. Description:
<input type="checkbox"/>	4. Not feasible. State Reason:
5.	Drain Runoff from Impervious Surfaces to Pervious Areas-County LID Handbook 2.2.5

LID Street & Road Design	
<input checked="" type="checkbox"/>	Curb-cuts to landscaping
<input checked="" type="checkbox"/>	Rural Swales
<input type="checkbox"/>	Concave Median
<input type="checkbox"/>	Cul-de-sac Landscaping Design
<input type="checkbox"/>	Other. Description:
LID Parking Lot Design	
<input type="checkbox"/>	Permeable Pavements
<input checked="" type="checkbox"/>	Curb-cuts to landscaping
<input type="checkbox"/>	Other. Description:
LID Driveway, Sidewalk, Bike-path Design	
<input type="checkbox"/>	Permeable Pavements
<input checked="" type="checkbox"/>	Pitch pavements toward landscaping
<input type="checkbox"/>	Other. Description:
LID Building Design	
<input type="checkbox"/>	Cisterns & Rain Barrels
<input checked="" type="checkbox"/>	Downspout to swale
<input type="checkbox"/>	Vegetated Roofs
<input type="checkbox"/>	Other. Description:
LID Landscaping Design	
<input checked="" type="checkbox"/>	Soil Amendments
<input checked="" type="checkbox"/>	Reuse of Native Soils
<input checked="" type="checkbox"/>	Smart Irrigation Systems
<input type="checkbox"/>	Street Trees
<input type="checkbox"/>	Other. Description: Planted trees within parking area.
<input type="checkbox"/>	5. Not feasible. State Reason:

CHANNELS & DRAINAGES

Complete the following checklist to determine if the project includes work in channels.

Table 8

No.	CRITERIA	YES	NO	N/A	COMMENTS
1.	Will the project include work in channels?	X			If YES go to 2 If NO go to 13.
2.	Will the project increase velocity or volume of downstream flow?		X		If YES go to 6.
3.	Will the project discharge to unlined channels?		X		If YES go to 6.
4.	Will the project increase potential sediment load of downstream flow?		X		If YES go to 6.
5.	Will the project encroach, cross, realign, or cause other hydraulic changes to a stream that may affect downstream channel stability?		X		If YES go to 8.
6.	Review channel lining materials and design for stream bank erosion.		X		Continue to 7.
7.	Consider channel erosion control measures within the project limits as well as downstream. Consider scour velocity.	X			Continue to 8.
8.	Include, where appropriate, energy dissipation devices at culverts.	X			Continue to 9.
9.	Ensure all transitions between culvert outlets/headwalls/wingwalls and channels are smooth to reduce turbulence and scour.	X			Continue to 10.
10.	Include, if appropriate, detention facilities to reduce peak discharges.	X			
11.	"Hardening" natural downstream areas to prevent erosion is not an acceptable technique for protecting channel slopes, unless pre-development conditions are determined to be so erosive that hardening would be required even in the absence of the proposed development.		X		Continue to 12.
12.	Provide other design principles that are comparable and equally effective.				Continue to 13.
13.	End				

SOURCE CONTROL

Please complete the following checklist for Source Control BMPs. If the BMP is not applicable for this project, then check N/A only at the main category.

Table 9

BMP			YES	NO	N/A
1.	Provide Storm Drain System Stenciling and Signage				X
	1.a.	All storm drain inlets and catch basins within the project area shall have a stencil or tile placed with prohibitive language (such as: "NO DUMPING – DRAINS TO _____") and/or graphical icons to discourage illegal dumping.			X
	1.b.	Signs and prohibitive language and/or graphical icons, which prohibit illegal dumping, must be posted at public access points along channels and creeks within the project area.			X
2.	Design Outdoors Material Storage Areas to Reduce Pollution Introduction				
	2.a.	This is a detached single-family residential project. Therefore, personal storage areas are exempt from this requirement.	X		
	2.b.	Hazardous materials with the potential to contaminate urban runoff shall either be: (1) placed in an enclosure such as, but not limited to, a cabinet, shed, or similar structure that prevents contact with runoff or spillage to the storm water conveyance system; or (2) protected by secondary containment structures such as berms, dikes, or curbs.			
	2.c.	The storage area shall be paved and sufficiently impervious to contain leaks and spills.	X		
	2.d.	The storage area shall have a roof or awning to minimize direct precipitation within the secondary containment area.			X
3.	Design Trash Storage Areas to Reduce Pollution Introduction				
	3.a.	Paved with an impervious surface, designed not to allow run-on from adjoining areas, screened or walled to prevent off-site transport of trash; or,	X		
	3.b.	Provide attached lids on all trash containers that exclude rain, or roof or awning to minimize direct precipitation.	X		
4.	Use Efficient Irrigation Systems & Landscape Design				
	The following methods to reduce excessive irrigation runoff shall be considered, and incorporated and implemented where determined applicable and feasible.				
	4.a.	Employing rain shutoff devices to prevent irrigation after precipitation.	X		
	4.b.	Designing irrigation systems to each landscape area's specific water requirements.	X		
	4.c.	Using flow reducers or shutoff valves triggered by a pressure drop to control water loss in the event of broken sprinkler heads or lines.	X		
	4.d.	Employing other comparable, equally effective, methods to reduce irrigation water runoff.	X		
5.	Private Roads				

BMP		YES	NO	N/A
	The design of private roadway drainage shall use at least one of the following			
5.a.	Rural swale system: street sheet flows to vegetated swale or gravel shoulder, curbs at street corners, culverts under driveways and street crossings.	X		
5.b.	Urban curb/swale system: street slopes to curb, periodic swale inlets drain to vegetated swale/biofilter.	X		
5.c.	Dual drainage system: First flush captured in street catch basins and discharged to adjacent vegetated swale or gravel shoulder, high flows connect directly to storm water conveyance system.			X
5.d.	Other methods that are comparable and equally effective within the project.			X
6.	Residential Driveways & Guest Parking			
	The design of driveways and private residential parking areas shall use one at least of the following features.			
6.a.	Design driveways with shared access, flared (single lane at street) or wheelstrips (paving only under tires); or, drain into landscaping prior to discharging to the storm water conveyance system.	X		
6.b.	Uncovered temporary or guest parking on private residential lots may be: paved with a permeable surface; or, designed to drain into landscaping prior to discharging to the storm water conveyance system.			X
6.c.	Other features which are comparable and equally effective.			X
7.	Dock Areas			
	Loading/unloading dock areas shall include the following.			X
7.a.	Cover loading dock areas, or design drainage to preclude urban run-on and runoff.			X
7.b.	Direct connections to storm drains from depressed loading docks (truck wells) are prohibited.			X
7.c.	Other features which are comparable and equally effective.			X
8.	Maintenance Bays			
	Maintenance bays shall include the following.			
8.a.	Repair/maintenance bays shall be indoors; or, designed to preclude urban run-on and runoff.			X
8.b.	Design a repair/maintenance bay drainage system to capture all wash water, leaks and spills. Connect drains to a sump for collection and disposal. Direct connection of the repair/maintenance bays to the storm drain system is prohibited. If required by local jurisdiction, obtain an Industrial Waste Discharge Permit.			X
8.c.	Other features which are comparable and equally effective.			X
9.	Vehicle Wash Areas			
	Priority projects that include areas for washing/steam cleaning of vehicles shall use the following.			
9.a.	Self-contained; or covered with a roof or overhang.			X
9.b.	Equipped with a clarifier or other pretreatment facility.			X
9.c.	Properly connected to a sanitary sewer.			X
9.d.	Other features which are comparable and equally effective.			X

BMP		YES	NO	N/A
10.	Outdoor Processing Areas			X
	Outdoor process equipment operations, such as rock grinding or crushing, painting or coating, grinding or sanding, degreasing or parts cleaning, waste piles, and wastewater and solid waste treatment and disposal, and other operations determined to be a potential threat to water quality by the County shall adhere to the following requirements.			X
	10.a. Cover or enclose areas that would be the most significant source of pollutants; or, slope the area toward a dead-end sump; or, discharge to the sanitary sewer system following appropriate treatment in accordance with conditions established by the applicable sewer agency.			X
	10.b. Grade or berm area to prevent run-on from surrounding areas.			X
	10.c. Installation of storm drains in areas of equipment repair is prohibited.			X
	10.d. Other features which are comparable or equally effective.			X
11.	Equipment Wash Areas			
	Outdoor equipment/accessory washing and steam cleaning activities shall be.			
	11.a. Be self-contained; or covered with a roof or overhang.			X
	11.b. Be equipped with a clarifier, grease trap or other pretreatment facility, as appropriate			X
	11.c. Be properly connected to a sanitary sewer.			X
	11.d. Other features which are comparable or equally effective.			X
12.	Parking Areas			
	The following design concepts shall be considered, and incorporated and implemented where determined applicable and feasible by the County.			
	12.a. Where landscaping is proposed in parking areas, incorporate landscape areas into the drainage design.	X		
	12.b. Overflow parking (parking stalls provided in excess of the County's minimum parking requirements) may be constructed with permeable paving.			X
	12.c. Other design concepts that are comparable and equally effective.			X
13.	Fueling Area			
	Non-retail fuel dispensing areas shall contain the following.			
	13.a. Overhanging roof structure or canopy. The cover's minimum dimensions must be equal to or greater than the area within the grade break. The cover must not drain onto the fuel dispensing area and the downspouts must be routed to prevent drainage across the fueling area. The fueling area shall drain to the project's treatment control BMP(s) prior to discharging to the storm water conveyance system.			X
	13.b. Paved with Portland cement concrete (or equivalent smooth impervious surface). The use of asphalt concrete shall be prohibited.			X
	13.c. Have an appropriate slope to prevent ponding, and must be separated from the rest of the site by a grade break that prevents run-on of urban runoff.			X

BMP			YES	NO	N/A
	13.d.	At a minimum, the concrete fuel dispensing area must extend 6.5 feet (2.0 meters) from the corner of each fuel dispenser, or the length at which the hose and nozzle assembly may be operated plus 1 foot (0.3 meter), whichever is less.			X

Please list other project specific Source Control BMPs in the following box. Write N/A if there are none.

This project has an existing onsite pond that will act as a detention facility. This existing pond is not considered part of the B.M.P.'s.

The proposed bio retention swales and strips are the proposed B.M.P's for this project.

TREATMENT CONTROL

To select a structural treatment BMP using Treatment Control BMP Selection Matrix (Table 11), each priority project shall compare the list of pollutants for which the downstream receiving waters are impaired (if any), with the pollutants anticipated to be generated by the project (as identified in Table 5). Any pollutants identified by Table 5, which are also causing a Clean Water Act section 303(d) impairment of the receiving waters of the project, shall be considered primary pollutants of concern. Priority projects that are anticipated to generate a primary pollutant of concern shall select a single or combination of stormwater BMPs from Table 11, which **maximizes pollutant removal** for the particular primary pollutant(s) of concern.

Priority development projects that are **not** anticipated to generate a pollutant for which the receiving water is CWA 303(d) impaired shall select a single or combination of stormwater BMPs from Table 11, which are effective for pollutant removal of the identified secondary pollutants of concern, consistent with the “maximum extent practicable” standard.

Table 10. Treatment Control BMP Selection Matrix

Pollutants of Concern	Bioretention Facilities (LID)*	Settling Basins (Dry Ponds)	Wet Ponds and Wetlands	Infiltration Facilities or Practices (LID)*	Media Filters	High-rate biofilters	High-rate media filters	Trash Racks & Hydro-dynamic Devices
Coarse Sediment and Trash	High	High	High	High	High	High	High	High
Pollutants that tend to associate with fine particles during treatment	High	High	High	High	High	Medium	Medium	Low
Pollutants that tend to be dissolved following treatment	Medium	Low	Medium	High	Low	Low	Low	Low

*Additional information is available in the County of San Diego LID Handbook.

NOTES ON POLLUTANTS OF CONCERN:

In Table 12, Pollutants of Concern are grouped as gross pollutants, pollutants that tend to associate with fine particles, and pollutants that remain dissolved.

Table 11

Pollutant	Coarse Sediment and Trash	Pollutants that tend to associate with fine particles during treatment	Pollutants that tend to be dissolved following treatment
Sediment	X	X	
Nutrients		X	X
Heavy Metals		X	
Organic Compounds		X	
Trash & Debris	X		
Oxygen Demanding		X	
Bacteria		X	
Oil & Grease		X	
Pesticides		X	

A Treatment BMP must address runoff from developed areas. Please provide the post-construction water quality values for the project. Label outfalls on the BMP map. The Water Quality peak rate of discharge flow (Q_{wQ}) and the Water Quality storage volume (V_{wQ}) is dependent on the type of treatment BMP selected for the project.

Outfall	Tributary Area (acres)	Q_{wQ} (cfs)	V_{wQ} (ft ³)
Parcel 1	0.24	0.12	720ft ³
Parcel 2	0.33	0.15	720ft ³
Parcel 4	0.11	0.06	720ft ³
Access Rd	0.33	0.15	720ft ³

Velocity mitigated by rock rip rap

Please check the box(s) that best describes the Treatment BMP(s) selected for this project.

Biofilters
<input checked="" type="checkbox"/> Bioretention swale
<input type="checkbox"/> Vegetated filter strip
<input type="checkbox"/> Stormwater Planter Box (open-bottomed)
<input type="checkbox"/> Stormwater Flow-Through Planter (sealed bottom)
<input type="checkbox"/> Bioretention Area
<input type="checkbox"/> Vegetated Roofs/Modules/Walls
Detention Basins
<input type="checkbox"/> Extended/dry detention basin with grass/vegetated lining
<input type="checkbox"/> Extended/dry detention basin with impervious lining
Infiltration Basins
<input type="checkbox"/> Infiltration basin
<input type="checkbox"/> Infiltration trench
<input type="checkbox"/> Dry well
<input type="checkbox"/> Permeable Paving
<input type="checkbox"/> Gravel
<input type="checkbox"/> Permeable asphalt
<input type="checkbox"/> Pervious concrete
<input type="checkbox"/> Unit pavers, ungrouted, set on sand or gravel
<input type="checkbox"/> Subsurface reservoir bed
Wet Ponds or Wetlands
<input type="checkbox"/> Wet pond/basin (permanent pool)
<input type="checkbox"/> Constructed wetland
Filtration
<input type="checkbox"/> Media filtration
<input type="checkbox"/> Sand filtration
Hydrodynamic Separator Systems
<input type="checkbox"/> Swirl Concentrator
<input type="checkbox"/> Cyclone Separator
Trash Racks and Screens

Include Treatment Datasheet as Attachment E. The datasheet should include the following:	COMPLETED	NO
1. Description of how treatment BMP was designed. Provide a description for each type of treatment BMP.	X	
2. Engineering calculations for the BMP(s)	X	

Please describe why the selected treatment BMP(s) was selected for this project. For projects utilizing a low performing BMP, please provide a detailed explanation.

The project is designed to minimize the use of impervious areas. Streets have been designed to meet the minimum widths. Landscaping will consist of both native and non-native plants. The goal is to achieve plant establishment expeditiously to reduce erosion. The irrigation system for these landscaped areas will be monitored to reduce over irrigation, also proposed bio filter swale for runoff of newly paved areas and pad areas. Rock rip rap to reduce velocity at discharge point and storm drain outfalls. The existing on-site pond will not be part of the BMP for this project. The proposed bio retention swale and strips are considered sufficient for this minor subdivision. The combination of proposed construction and post-construction BMPs will reduce, to the maximum extent practicable, the expected pollutants and will not adversely impact the beneficial uses or water quality of the receiving waters.

MAINTENANCE

Please check the box that best describes the maintenance mechanism(s) for this project. Guidelines for each category are located in Chapter 5, Section 5.2 of the County SUSMP.

CATEGORY	SELECTED	
	YES	NO
First	✓	
Second ¹		✓
Third ¹		✓
Fourth		✓

Note:

1. Projects in Category 2 or 3 may choose to establish or be included in a Stormwater Maintenance Assessment District for the long-term maintenance of treatment BMPs.

ATTACHMENTS

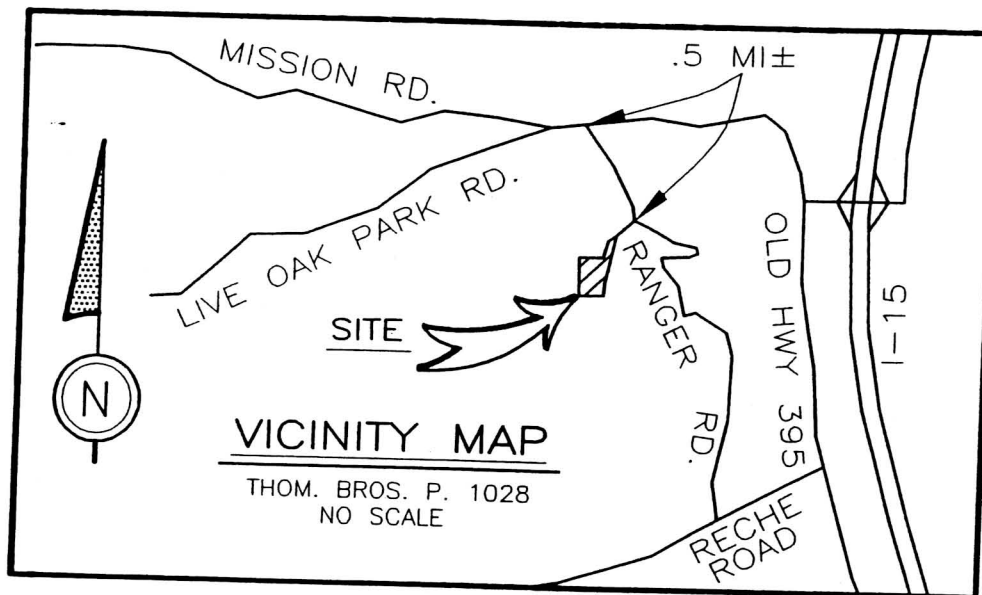
Please include the following attachments.

ATTACHMENT		COMPLETED	N/A
A	Project Location Map	✓	
B	Site Map	✓	
C	Relevant Monitoring Data		✓
D	LID and Treatment BMP Location Map	✓	
E	Treatment BMP Datasheets	✓	
F	Operation and Maintenance Program for Treatment BMPs	✓	✓
G	Fiscal Resources	✓	
H	Certification Sheet	✓	
I	Addendum		✓

Note: Attachments A and B may be combined.

ATTACHMENT A

PROJECT LOCATION MAP



ATTACHMENT B

SITE MAP

ATTACHMENT C

RELEVANT MONITORING DATA

(NOTE: PROVIDE RELEVANT WATER QUALITY MONITORING DATA IF AVAILABLE.)

ATTACHMENT D

LID AND TREATMENT BMP LOCATION MAP

LOG NO. 05-02-00 PRELIMINARY GRADING PLAN TENTATIVE PARCEL MAP 20976

NOTES

- 1) NO GRADING PROPOSED
- 2) CONTOURS FROM AERIAL PHOTO DATED 5-21-04

NOTE

THIS PLAN IS PROVIDED TO ALLOW FOR FULL AND ADEQUATE DISCRETIONARY REVIEW OF A PROPOSED DEVELOPMENT PROJECT. THE PROPERTY OWNER ACKNOWLEDGES THAT ACCEPTANCE OR APPROVAL OF THIS PLAN DOES NOT CONSTITUTE AN APPROVAL TO PERFORM ANY GRADING SHOWN HEREON, AND AGREES TO OBTAIN VALID GRADING PERMITS BEFORE COMMENCING SUCH ACTIVITY.



GRAPHIC SCALE: 1" = 100'

LAND DIVISION STATEMENT - OWNER'S CERTIFICATE

I HEREBY CERTIFY THAT I AM THE RECORD OWNER, AS SHOWN ON THE LATEST EC COUNTY ASSESSMENT OF THE PROPERTY SHOWN, AND THAT THE PARCEL MAP IS A TRUE AND CORRECT REPRESENTATION OF THE BOUNDARIES OF THE PARCEL MAP. I HAVE BEEN ADVISED BY A PROFESSIONAL SURVEYOR THAT THE PARCEL MAP IS IN ACCORDANCE WITH THE REQUIREMENTS OF THE SUBDIVISION MAP ACT, AND THAT THE PARCEL MAP IS A TRUE AND CORRECT REPRESENTATION OF THE BOUNDARIES OF THE PARCEL MAP. I HAVE BEEN ADVISED BY A PROFESSIONAL SURVEYOR THAT THE PARCEL MAP IS IN ACCORDANCE WITH THE REQUIREMENTS OF THE SUBDIVISION MAP ACT, AND THAT THE PARCEL MAP IS A TRUE AND CORRECT REPRESENTATION OF THE BOUNDARIES OF THE PARCEL MAP.

I FURTHER CERTIFY THAT I WILL NOT, BY THIS APPLICATION, CREATE OR CAUSE TO BE CREATED, OR WILL NOT HAVE PARTICIPATED IN THE CREATION OF, ANY ADJACENT PROPERTY UNLESS SUCH PARCELS WERE CREATED BY MAJOR SUBDIVISION. I HAVE BEEN ADVISED BY A PROFESSIONAL SURVEYOR THAT THE PARCEL MAP IS IN ACCORDANCE WITH THE REQUIREMENTS OF THE SUBDIVISION MAP ACT, AND THAT THE PARCEL MAP IS A TRUE AND CORRECT REPRESENTATION OF THE BOUNDARIES OF THE PARCEL MAP.

I CERTIFY UNDER PENALTY OF PERJURY THAT THE FOREGOING IS TRUE AND CORRECT. EXECUTED THIS _____ DAY OF _____, 2007.

(ALL OWNERS MUST SIGN)

OWN: NHU DO
THU HOA T. NGUYEN

ADDRESS: 405 RANGER RD.
FALLBROOK, CA 92028

PHONE: (760) 451-9379

1. COMPLETE TAX ASSESSOR'S NUMBER: 108-081-06
2. APPROVED LEGAL DESCRIPTION: PARCEL 1 OF PM 2493
3. GENERAL PLAN REGIONAL CATEGORY: E.D.A.
4. COMMUNITY/SUBREGIONAL PLAN AREA: FALLBROOK
5. LAND USE DESIGNATION(2): (17) ESTATES
6. EXISTING ZONING: A-70 2 AC.
7. TAX RATE AREA: 75016

USE REGULATIONS

ANIMAL RECS

DENSITY

LOT SIZE

BUILDING TYPE

MAX F.R. AREA

F.R. AREA RATIO

HEIGHT

COVERAGE

SETBACK

OPEN SPACE

SPECIAL AREA RECS

ASSOCIATED PERMITS: N/A

LOCATION AND STATUS OF EXISTING LEGAL ACCESS TO SUBJECT PROPERTY FOR PURPOSES OF THIS APPLICATION, AND RECORDS OF EXISTING UNRECORDED EASEMENTS, SPECIFY WIDTH, EXISTING 30 FT. PRIVATE RD. ESM.

(P/P 187750 RECORDED 10/21/63) TO RANGER RD. A PUBLICLY MAINTAINED WATER SOURCE/ WATER DISTRICT: RAINBOW MUNICIPAL WATER DISTRICT

SEPTIC/ SEWER DISTRICT: SEPTIC - SUBSURFACE DISPOSAL

FIRE DISTRICT: NORTH COUNTY FIRE PROTECTION DISTRICT

SCHOOL DISTRICT: FALLBROOK UNION ELEMENTARY AND FALLBROOK UNION HIGH SCHOOL

SIGNATURE OF APPLICANT

NAME: SAME AS ABOVE

ADDRESS:

PHONE:

PREPARED BY:

WILLIAMS SURVEYING INC.

FALLBROOK, CA 92028

760-728-1134

LS 2961/RCE 14870

LEGEND

DESIGNATED REMAINDER PARCEL

4.53 AC. GROSS

3.90 AC. NET

EXISTING SINGLE FAMILY RESIDENCE

5000 C.Y.

2.8%

DIRECTION OF DRAINAGE & PERCENT OF GRADE

LEGEND

YARDAGE QUANTITIES

YARDAGE CUT

2:1 RATIO

500 C.Y.

TOE EL=850

500 C.Y.

TOE EL=872

2500 C.Y.

TOE EL=942

2500 C.Y.

TOE EL=920

2000 C.Y.

TOE EL=848

2000 C.Y.

TOE EL=838

RAISED FOUNDATION

1

2

3

4

PARCEL 1

4.05 AC. GROSS

4.00 AC. NET

500 C.Y.

TOE EL=850

500 C.Y.

TOE EL=872

2500 C.Y.

TOE EL=942

2500 C.Y.

TOE EL=920

2000 C.Y.

TOE EL=848

2000 C.Y.

TOE EL=838

PARCEL 2

4.00 AC. GROSS

3.61 AC. NET

500 C.Y.

TOE EL=850

500 C.Y.

TOE EL=872

2500 C.Y.

TOE EL=942

2500 C.Y.

TOE EL=920

2000 C.Y.

TOE EL=848

2000 C.Y.

TOE EL=838

PARCEL 3

4.13 AC. GROSS

4.19 AC. NET

500 C.Y.

TOE EL=850

500 C.Y.

TOE EL=872

2500 C.Y.

TOE EL=942

2500 C.Y.

TOE EL=920

2000 C.Y.

TOE EL=848

2000 C.Y.

TOE EL=838

PARCEL 4

4.11 AC. GROSS

4.09 AC. NET

500 C.Y.

TOE EL=850

500 C.Y.

TOE EL=872

2500 C.Y.

TOE EL=942

2500 C.Y.

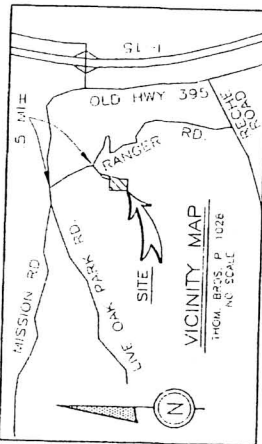
TOE EL=920

2000 C.Y.

TOE EL=848

2000 C.Y.

TOE EL=838



VICINITY MAP

FROM BASE MAP 1026

AT SCALE

1" = 100'

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ATTACHMENT E

TREATMENT BMP DATASHEET

BIO SWALES
TPM 20976
DIEN NHU DO

PARCEL NO. 1

DRIVEWAY & CUL-DE-SAC

Driveway 600' x 16" = 9,600 sq. ft.

Cul-de-sac = 1,020 sq. ft.

Total = 10,620 sq. ft. = 0.24 acs

$a = 0.24 \text{ ACS}$

$L = 600$

SOIL GROUP "C"

$H = 863 - 820 = 321$

$C = 0.36$

$S = 7.8\%$

$T_c = 2.75 + 7.2$

$Q_{wq} = 0.36(1.4)(0.24)$

$T_c = 10$

$Q_{wq} = 0.12 \text{ cfs}$

$I_{wq} = 1.4$

$Q_{100} = 0.36(6.0)(0.8)$

$I_{100} = 6.0 \text{ IN/HR}$

$Q_{100} = 1.72 \text{ cfs}$

PARCEL NO. 2

ACCESS ROAD 600' x 24' = 14,400 sq. ft. = 0.33 acs.

$a = 0.33 \text{ ACS}$

$L = 00'$

SOIL GROUP "C"

$H = 880 - 830 = 50'$

$C = 0.36$

$S = 6\%$

$T_c = 3.1 + 8$

$Q_{wq} = 0.36(1.3)(0.33)$

$T_c = 11.1$

$Q_{wq} = 0.15 \text{ cfs}$

$I_{wq} = 1.3$

$Q_{100} = 0.36(6.1)(1.95)$

$I_{100} = 6.0 \text{ IN/HR}$

$Q_{100} = 4.2 \text{ cfs}$

PARCEL NO. 3 NO PAVEMENT

PARCEL NO. 4 DRIVEWAY 300' x 16' = 4800 sq. ft. = 0.11 acs.

$a = 0.11 \text{ ACS}$

$L = 300'$

SOIL GROUP "C"

$H = 841 - 820 = 21'$

$C = 0.36$

$S = 7\%$

$T_c = 2 + 7.0$

$Q_{wq} = 0.36(1.5)(0.11)$

$T_c = 9$

$$Q_{wq} = 0.06 \text{ cfs}$$

$$I_{wq} = 1.5$$

$$Q_{100} = 0.36(6.2)(0.34)$$

$$I_{100} = 6.2 \text{ IN/HR}$$

$$Q_{100} = 0.8 \text{ cfs}$$

CAPACITY BIO SWALES Parcels No. 1 & 4

Use $n = 0.25$ for W.Q.

$$S = 0.0001\%$$

$$S \frac{1}{2} = 0.01$$

ASSUME WATER DEPTH $2'' = 0.167'$

$$w_p = 5.0$$

$$a = 0.75$$

$$r = \frac{0.75}{5.0} = 0.15 \quad \frac{2}{3} = 0.28$$

$$Q_{wQ} = \frac{1.486}{0.025} = (0.75)(0.28)(0.01)$$

$Q_{wQ} = 0.12 \text{ cfs}$ $V = 0.166 \text{ ft/sec}$ EXCEED $0.12 \text{ cfs} \therefore \text{OK}$ 10 MIN RETENTION TIME
LENGTH SWALE = $60 \times 10 \text{ MIN}$

$$(0.166) = 100'$$

ACCESS ROAD

$Q_{wQ} = 0.15 \text{ cfs}$ $V = 0.20 \text{ FT/SEC}$ LENGTH SWALE = $60 \times 10 \text{ MINS}$ $(0.20) = 120 \text{ FT.}$

ASSUME WATER DEPTH $12'' = 1 \text{ FT.}$

Use $n = 0.0.25$ for Q_{100}

$$w_p = 10.32$$

$$a = 7$$

$$r = \frac{7}{10.32} = 0.67 \quad \frac{2}{3} = 0.77$$

$$Q_{100} = \frac{1.486}{0.04} = (7)(0.77)(0.01) = 3.2 \text{ cfs}$$

$V = 4.5 \text{ ft/sec}$ EXCEED $1.72 \text{ \& } 0.8 \text{ cfs} \therefore \text{OK}$

BIO SWALE LENGTH FOR 10 MIN. RETENTION DRIVEWAYS PCL 1 & 4

$L = 100 \text{ FT.}$

ACCESS ROAD $L = 120 \text{ FT.}$

ATTACHMENT F

OPERATION AND MAINTENANCE PROGRAM FOR TREATMENT BMPS

1 of 18
1/22/2003

Appendix H Estimated O&M Cost for Treatment BMP's site Details

APPENDIX H Estimated O & M Costs for BMP Project

Estimated values derived from Caltrans Pilot BMP Study. This spreadsheet will change as additional data becomes available.

						Labor			Equipment			Materials		Total	Comments
						Per. Hrs	Rate	Cost	Type	Days	Rate	Cost	Item	Cost	
BIOFILTER - STRIPS and SWALES															
Preventive Maintenance and Routine Inspections															
ROUTINE ACTIONS	MAINTENANCE INDICATOR	FIELD MEASUREMENT	MEASUREMENT FREQUENCY	MAINTENANCE ACTIVITY	SITE-SPECIFIC REQUIREMENTS										
Height of vegetation	Average vegetation height exceeds 12 inches, emergence of trees, or woody vegetation	Visual inspection of vegetation throughout strip/swale	Once during wet season, once during dry season (depending on growth)	Cut vegetation to an average height of 6 inches	Remove any trees, or woody vegetation.	10	43.63	436.3	one-ton truck & hydroseeder	2	26.64	53.68	string trimmer, rake, fork, bags, safety equipment	50	539.96
Assess adequate vegetative cover	Less than 90 percent coverage in strip invertebrate or less than 70 percent on swale side slope	Visual inspection of strip/swale. Prepare a site schematic to record location and distribution of barren or browning spots to be restored. File the schematic for assessment of persistent problems.	Assess quantity needed in May each year late wet season and late dry season.	Re-seed/revegetate barren spots by Nov.		0	43.63	348.04	one-ton truck & hydroseeder	1	48.15	48.15	seed	150	547.19
				Scarify area to be restored, to a depth of 2-inches. Restore side slope coverage with hydroseed mixture.		0	43.63	0	one-ton truck & hydroseeder	0	26.64	0			0
Inspect for debris accumulation	Debris or litter present	Visual observation	During routine trashing, per Districts schedule.	Remove litter, and debris.	None	0	43.63	0	one-ton truck & hydroseeder	0	26.64	0	blanket	0	0
				Remove sediment. If flow is channelled, determine cause and take corrective action. If sediment becomes deep enough to change the flow gradient, remove sediment during dry season, characterize and properly dispose of sediment, and revegetate.		0	0	0	one-ton truck & hydroseeder	0	0	0			0
Inspect for accumulated sediment	Sediment at or near vegetation height, channeling of flow, inhibited flow due to change in slope.	Visual observation	Annually			16	43.63	698.08	one-ton truck & hydroseeder	1	48.15	48.15	seed, testing and disposal of sediment	300	1048.23
				Notify engineer to determine if regrading is necessary. If necessary, regrade to design specification and revegetate strip/swale. If regrading is necessary, the process should start in May. Revegetate strip/swale in Nov. Target completion prior to wet season.	None	2	43.63	87.26				0			87.26
Inspect for burrows	Burrows, holes, mounds	Visual observation	Annually and after vegetation trimming.	Where burrows cause seepage, erosion and leakage, backfill firmly.		0	0	0	one-ton truck & hydroseeder	0	26.64	0			0
General Maintenance Inspection	Inlet structures, outlet structures, side slopes or other features damaged, significant erosion, emergence of trees, woody vegetation, fence damage, etc.	Visual observation	Semi-Annually, late wet season and late dry season.	Corrective action prior to wet season. Consult engineer if an immediate solution is not evident.	Remove any trees, or woody vegetation.	16	43.63	698.08	one-ton truck & hydroseeder	2	26.64	53.68			751.76
TOTAL BIO FILTER AND SWALES						62		2268.76				203.66		500	2972.42

ATTACHMENT G


FISCAL RESOURCES

MAINTENANCE OF THE PROPOSED BIO FILTERS SWALE WITHIN THE PROPOSED ROAD RIGHT OF WAYS WILL BE PART OF THE ROAD MAINTENANCE AGREEMENT AND FUNDS WILL BE COLLECTED THROUGH THE HOMEOWNERS ASSOCIATION (HOA) ASSESSMENTS. BIO FILTER SWALE ASSOCIATED WITH PADS AND DRIVEWAYS WILL BE MAINTAINED BY THE HOMEOWNER UPON WHICH THE BIO FILTER SWALE IS LOCATED. THE COST OF THE ANNUAL MAINTENANCE IS LISTED ON ATTACHED "F" TITLED OPERATION AND MAINTENANCE PROGRAMS FOR TREATMENT B.M.P.

ATTACHMENT H

CERTIFICATION SHEET

This Stormwater Management Plan has been prepared under the direction of the following Registered Civil Engineer. The Registered Civil Engineer attests to the technical information contained herein and the engineering data upon which recommendations, conclusions, and decisions are based.


Hadley Johnson, R.C.E. 14870

Sept. 26, 2008
Date

ATTACHMENT I

ADDENDUM